MAINTENANCE OF FARM IMPROVEMENTS

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FARMSTEAD MAINTENANCE

For the purpose of the following discussion, the term "Farmstead Maintenance" may be defined as meaning the preservation or keeping of the land and all improvements in such a state of repair as to prevent undue deterioration, to give a pleasing aspect and to reflect pride of ownership.

It is a well known fact that deterioration generally is a slow, insidious and constantly occurring process. Most of us become so familiar with our every day surroundings that we fail, to a great extent, to notice the gradual change taking place until it is forcibly brought to our attention by the failure of a piece of equipment or a portion of a structure. This may be costly both in time and money and may also result in personal injury.

The need for maintenance, therefore, is constant and one should form the more or less unconscious habit, while performing the regular daily tasks, of observing the results of wind or water erosion on land, the effect of alternating wind, rain and sunshine on dwellings and other structures, the general condition of all operating equipment, fences, lawns, shade trees, fruit trees, shrubs and flowers. In addition, a careful inspection of all wood foundations, sills and floors of buildings should be made at regular intervals to determine the possibility of termite infestation and decay.

In the following paragraphs, general farmstead maintenance and repair are discussed under the several headings in the approximate order of their importance to assist field personnel, during

the course of farmstead inspections; in determining the extent of deterioration, the preparation of lists of repairs to be made, and in the application of methods and materials to be used in making such repairs as are found to be necessary.

BUILDING FOUNDATIONS: Earth around all buildings should be graded to secure proper drainage preventing puddles of water from collecting close to foundations. The building most commonly damaged by failure to do this is the barn where wind erosion and rain combine to create holes near the foundation which may result in settlement of the structure. Settlement is usually most severe at corners and at the front of sheds. Once severe settlement has occurred under a heavily loaded barn, it becomes a major problem to bring it back to its former level and general structural soundness. While a barn has been specifically mentioned, these remarks apply equally well to all buildings. It should also be borne in mind that the leveling up of foundations which have been allowed to settle to any great extent does not, in all instances result in bringing the walls of the building back to their original lines. This should be done and, generally speaking, it will be found that additional bracing is required to prevent recurrence.

ROOFS: Shingle roofs should have missing shingles replaced, loose shingles pushed back into place and renailed, and split shingles underlaid with tin or sheet metal shingles. If trees overhang the building, fallen twigs and leaves should be removed periodically and not allowed to accumulate. Such accumulations, especially in the valleys, retain moisture and dirt which rot

both shingles and valley materials, and cause leaks to develop long before the natural life expectancy of the roof has elapsed. When new shingle roofs are required, they may be applied directly over the old shingles as recommended by the cedar shingle manufacturers association. Lumber dealers will be glad to furnish detailed instructions on the subject.

The value of paint on shingles is a controversial subject, but the general opinion is that paint makes shingles more brittle, causes them to curl and may form moisture retaining pockets resulting in decay. Stains may be applied for decorative purposes but will fade and wash off in a short time.

The nails in metal roofs become loose and sometimes come out altogether. Driving up loose nails and renailing is about the only maintenance required on this type of roof. This work is most profitably done during the summer months before fall storms occur. Particular attention should be given to nailing at eaves and gables. Flashings around chimneys and pipes should be checked for water tightness. Leaks may be repaired by the application of asphalt roofing cement.

SIDEWALLS: Sidewalls, whether of weatherboards or boxing and batten, should be inspected carefully for loose nails to be driven tight and for warped boards that require additional nailing. Sidewalls of all buildings will need paint on an average of every three to five years, depending on the quality of paint used. Painting should be done when the old paint begins to chalk or scale. Less paint will be required and a better job will be secured if the

walls are first scrubbed with a stiff wire brush to remove all loose paint, and if all dust and dirt is thoroughly cleaned out of all corners and from window sills, etc.

Sidewalls are endangered by dirt piling up against the boards at the sill line of buildings or against wood skirting around the house. The result is rotted out sills and boards. Repairs are difficult. The remedy is to keep the dirt properly graded, the boards painted and the sills treated with creosote oil where possible.

It is false economy to use cheap paint of poor quality. The best quality paint made by a standard paint manufacturer will pay dividends both in appearance and lasting qualities.

WOOD FLOORS: Squeaky floor boards are usually those which do not rest firmly on the joist beneath. A simple remedy is to slip a strip of wood shingle firmly between the offending board and the joist.

Length of service before refinishing becomes necessary will vary according to the use that is made of the floor. Porch floors exposed to the weather should be painted at least once each year. Where floors are varnished they should be cleaned and revarnished at least once each year. Floors finished with penetrating floor seal will require cleaning and refinishing at least once every two years. Floors in sandy localities will require refinishing more often, and the time to refinish may be determined by observing the wear in doorways and halls.

Many people have attempted to refinish without first

removing wax or oily floor polish and have found that even after many days the varnish was still wet and tacky. Use mild soap and water sparingly to remove oils, and then remove soap residue with mop or cloth and clear warm water. Do not flood the floor and do not use strong soap or lye for cleaning purposes. Be sure the floor is completely dry before applying new finish.

WINDOWS AND DOORS: Windows and doors require very little maintenance other than the tightening of screws in hinges and locks, replacing of broken glass and occasional reputtying. It is important, however, to see that moisture is prevented from entering the window or door frames and forming pockets in the wall which will result in rotting of sills and studs, and staining of interior wall finish. Casings over windows and doors which are not protected by ample roof projection should be flashed water tight. The meeting point of window and door frames with the sills should be puttied or filled with caulking compound.

TERMITES: The damage resulting from the actions of termites, or wood lice as they are sometimes called, is quite extensive in some areas. This will be noticed particularly in wood foundations and floors. In places where this particular type of damage has occurred, especially in wood foundation and framing members such as sills and joists, it is advisable to replace with creosoted lumber if obtainable. If creosoted lumber is not obtainable, several brush coats of liquid creosote may be applied to the new lumber and additional brush coats applied at regular intervals. Termites do not thrive where the ground is kept dry and where

ample light and ventilation are provided. Preventive measures that will ensure these conditions will usually be sufficient.

WATER WELLS: It is important that the earth around the top of the well be kept properly graded, not only to prevent puddles of water from forming, and to protect the concrete slab and windmill tower foundations, but to prevent surface water from seeping downward alongside the water well casing to a point where it might enter and possibly contaminate the well.

TESTING AND DISINFECTION OF WATER SUPPLIES: All newly acquired, newly constructed, or repaired domestic water supplies must be tested for sanitary quality. Sterile bottles for the collection of water samples may be obtained from respective State Health Departments, and their instructions for the collection and shipment of water samples must be observed. Water samples sent through the mail must be packed in accordance with U. S. postal regulations. State Health Departments generally will examine water samples at no cost, provided their instructions for collection have been complied with.

Whenever a new source of drinking water is developed, or an existing source is repaired or acquired, or when bottles have been collected and the result of the examination shows the water to be unsafe for domestic use, it must be disinfected thoroughly.

Disinfection must not be confused with the sterilization of water in connection with treatment. It is done to assure the cleansing of all new or existing construction and equipment and requires a stronger solution than is used in the sterilization of

drinking water. Disinfection can be done with chlorinated lime containing about 25 per cent available chlorine, and the quantities necessary will be governed by the size and depth of the well or cistern. The office of the Regional Engineer will issue instructions for disinfection of wells and equipment if furnished with data giving the size of the well, the depth of water in the well, and a description of the equipment.

Sterilization of water for drinking purposes should be done by a competent sanitary authority, preferably a representative of the County or State Health Department who will determine the kind and amount of disinfectant for each particular water. Pending such examination and sterilization, the householder should boil all water used for cooking and drinking purposes.

PUMPS: Hand pumps should be kept securely bolted to the concrete slab. The packing around the pump rod should be replaced when necessary to prevent leakage and to prevent side wear on the packing nut and pump rod. It is advisable to use a deep well type cylinder with the drop pipe a size larger than the cylinder in all instances where the length of drop pipe is over 20 feet. This type of installation permits the removal of the rod and plunger through the pump standard for replacement of cup leathers without removing the drop pipe.

Instructions for the care and maintenance of power pumps are attached to pumps by the manufacturer and should be carefully followed to obtain maximum service.

WINDMILLS AND TOWERS: Windmills require little maintenance

other than cleaning the crank case once a year and refilling with the proper grade of oil, occasional greasing or oiling the turntable and keeping the proper adjustments on the brake shoe. Windmill towers and storage tank covers, if constructed of wood, will require periodic tightening of all bolts and nails and should be painted one coat every two years. Steel towers require frequent inspection to ensure even tension on all girts and braces. In making adjustments to maintain even tension, it is necessary to stand on the horizontal girts at the various elevations and care should be exercised to stand on girts only at the end where they join the tower legs. Bent girts will pull the tower legs out of line and may cause them to fail under sudden stress.

STORAGE TANKS: The life of steel storage tanks may be materially lengthened by the application of two coats of asphalt paint or bituminous enamel to the inside surface. If a tank has been in use, the inside should be thoroughly dried and cleaned with a steel wire brush before paint is applied. Be sure that the first coat is perfectly dry before applying a second coat. Wood storage tanks are generally constructed of Cypress or Redwood lumber and do not require painting except for decorative purposes.

PLUMBING FIXTURES: Modern plumbing fixtures require little or no maintenance beyond regular cleaning and occasional replacement of faucet washers. It is important however if the high gloss enamel is to be preserved, that only non-abrasive cleaners or soap and water be used for cleaning purposes. Acids and

citrus fruit juices should not be allowed to come in contact with the enamel unless the enamel is what is known as acid resisting and is so designated by a stamp in the enamel at one end of the fixture rim. Rust stains may be removed first with a safety razor blade, finishing with a non-abrasive cleaner. In the event a portion of the enamel becomes chipped or broken out, the raw exposed metal should be immediately covered with one coat of clear varnish, followed by two coats of enamel.

WATER HEATERS: Gas burning storage type water heaters should be equipped with drain valve, safety valve, snap acting thermostat and safety pilot. One to two gallons of water should be drawn off through the drain valve every week to remove sediment. The function of the safety pilot is to automatically prevent opening of the main gas valve in the event the pilot light is extinguished. This is extremely important where Butane or other liquified petroleum gas is used for fuel as these gases are highly explosive and are heavier than air. These characteristics make it imperative that no leaks be permitted in piping or gas burning applicances which would allow unburned gas to accumulate at the floor level and spread to eventually reach an open flame.

It is also important that all gas piping be installed in such manner as to drain back to the supply tank in order to avoid low places or pockets in the line which might become full of liquid gas and shut off the supply to an appliance if the outside temperature dropped to a point below the boiling point of

the gas. In such an event a rise in temperature would then convert the liquid in the pockets to gas, and unless the supply to the appliance had been shut off, or the appliance was equipped with a safety pilot, the gas would spill out over the floor of the room with possible disasterous results.

SEPTIC TANKS: Septic tanks require little maintenance beyond an occasional inspection to determine the depth of sludge in the bottom of the tank and the thickness of the scum on top of the liquid. If scum or foam has accumulated to a thickness of one inch or more it should be removed and buried. When sludge accumulates to a depth of one foot or more it should be removed and buried. Sludge or scum from a septic tank should not be used as garden fertilizer.

FENCES, GATES, DRIVES, LAWNS, TREES, SHRUBS, FLOWERS AND FRUITS: The above items are recognized as being necessary parts of a well planned farmstead and will require a considerable expenditure of time and effort for proper maintenance. It is assumed, however, that the farmer is fully conversant with both the methods and materials to be used for the proper upkeep of these items and additional discussion is considered inappropriate herein.

IRRIGATION: Prior to the beginning of the irrigation season, a careful inspection should be made of all permanent irrigation ditches and their appurtenant structures. All silt and vegetation which may obstruct the free flow of water should be removed; embankment damage due to erosion should be repaired, and the entire

ditch system made to conform to its original grade and cross section. Warped or rotted parts of wood structures such as head gates, check boxes, weir bulkheads, flumes, etc., should be replaced. Where concrete structures occur, careful attention should be given to the junction of embankments with wing walls and cut-off walls to insure against leakage and wash-outs when water is turned on. Irrigation pumps equipped with vertical hollow shaft electric motors require little maintenance other than proper lubrication. Care must be taken however, to apply only the correct amount of motor lubricant; either too much or not enough will cause the motor to overheat. When gasoline engines are used a careful record of the total number of hours operation should be kept, so that the engine manufacturers recommended maximum operating hours are not exceeded before the engine is reconditioned. This is good insurance against engine failure during the irrigation season. All drive belts should be removed at the close of the irrigation season, and stored where they will not freeze or become wet.

CONCLUSION: No attempt has been made to cover maintenance problems that are peculiar to certain areas only, or those which will require technical assistance. The services of the engineering staff are available and should be requested whenever necessary.